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IN THIS ISSUE

Cytologic Diagnosis of Malignant Disease
Nelson A. Murray

Chronic Pyuria in Infants and Children
Meredith Campbell

Medical News Writers Urged To Be Cautious
An Editorial

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Cytologic Diagnosis of Malignant Disease

NELSON A. MURRAY, M.D.
JACKSONVILLE

Interest has been aroused anew during recent years in cytologic or "single cell" diagnosis of malignant disease. This interest has been largely stimulated by the lay press and popular magazines. Through these lay forces the public has been led to believe that the procedure is easy, quick and inexpensive, and, to a certain degree, infallible. Particularly has the female component of our population been led to believe that such an examination may be carried out by a physician in his office, or even by his office technician; after a quick vaginal smear and a glance through the magic microscope, the patient expects her doctor to tell her whether or not she has cancer. Boyd,[1] in referring to a popular magazine article on carcinoma of the cervix, quoted: "The new method is inexpensive, painless, and at least 97 per cent accurate. If put into general use, it may almost wipe out this form of cancer." As Boyd indicated, nothing could be farther from the truth. Such misinformation can result only in an untold amount of harm.

The cytologic or "single cell" diagnosis is nothing new and has been practiced by pathologists with varying degrees of success for many years. Although the new atlases and staining technics allow for beautiful color photographs, no new concepts have been added. One still must search for the characteristics of the malignant cell — the large, irregular, hyperchromatic nucleus, presence and size of the nucleolus, mitotic figures, change in nucleus-cytoplasm ratio and multinuclear cells. Since, however, these cell changes occur in non-neoplastic disease conditions, reliance on such criteria alone will lead to error. At the present time, there is no single criterion that will enable one to decide whether or not a given cell is malignant.[2]

Read before the Florida Medical Association, Seventy-Sixth Annual Meeting, Hollywood, April 24, 1950.

While most attention has been directed to the female genital tract, one must realize that the source of material has little relationship to the value of the method. Sputum, gastric washings, pleural fluid, ascitic fluid, proctoscopic washings, urine, fluid from ureteral and renal catheterizations and bronchial washings may all be examined by this method. Of course one must be familiar with the picture of normal cells from the region in question and also with the neoplasms inherent to each particular location. In the examination of ascitic and pleural fluids one must constantly be on guard against interpreting endothelial cells as malignant. The degree of anaplasia and dedifferentiation of the individual cells comprising the neoplasm determines its degree of malignancy. Thus, neoplasms of higher grade are relatively easier to diagnose by the cytologic method. Such has been my experience. In fact, certain areas presenting low grade neoplasms primarily, such as the fundus of the uterus and the bladder, offer almost insurmountable obstacles to the method. One can readily see that familiarity with normal cells and characteristic neoplastic cells of a given body location are a prerequisite to any accuracy whatsoever. Certainly a general practitioner or technician is not equipped to perform such an examination satisfactorily.

Reliability of the Method Evaluated

Regarding so-called "errors" in the method from a statistical analysis of many articles embodying thousands of cases, one is lulled into a false sense of accuracy. One frequently sees such statistics as "100 cases examined by vaginal smear method; 20 cases reported positive and 18 cases proved by biopsy — error 2 per cent." On close examination, however, one sees that the error is not 2 per cent, but 2 errors out of 18 proved diagnoses, or 11 per cent. Also, the word

"error" is misleading. There are only three possible sources of "error" in the method. First, the examiner may miss the malignant cells; secondly, the examiner may fail to recognize the malignant cells; thirdly, the malignant cells may not be present on the slide. The first two are shortcomings of the examiner and may be eliminated only by education and practice. This observation is borne out by the fact that Woolner and McDonald[3] decreased their error in the cytologic diagnosis of bronchogenic carcinoma from 2 per cent in 150 cases in an investigative series to 0.7 per cent in 150 cases in a later evaluative series. The third is a limitation of the method, and may be partly overcome by repeated examinations.

Certain authors[4] claim that the vaginal smear is as reliable as a biopsy, but still nearly all workers use the biopsy as a measure of accuracy of the smear. The only limit of accuracy of biopsy is, however, the ability of the surgeon and pathologist to obtain and interpret the tissue correctly. Everyone knows that if a pathologist is to render a positive diagnosis of malignant disease, he must have malignant tissue to study. If the surgeon obtains a specimen for biopsy from a benign area, he can only expect a benign report. The same holds true for cytologic smears.

It has been claimed that one may diagnose early cancer, precancerous changes, and carcinoma in situ by the cytologic method. To my knowledge, no one can diagnose precancerous changes by this or any other method. Furthermore, since the method depends wholly on exfoliation, there is some question as to whether or not exfoliation is a part of the symptom complex of early cancer. Surely carcinoma in situ may be diagnosed by the cytologic method. If, however, the lesion is large enough to be seen with the naked eye, biopsy is certainly indicated. Furthermore, any attempt to diagnose type and location of a malignant lesion by cytologic study is an extremely hazardous procedure.

As soon as the pathologist becomes cognizant of his own limitations and the limitations of the method, the so-called error will be reduced to the vanishing point. In examining over 25,000 frozen sections I have been faced with a similar problem. Pathologists who perform frozen sections only rarely and amid great ceremony think that they must make a definite commitment each time, or jeopardize their standing among their surgical friends. One must realize that no one can make a diagnosis in every case, whether in pathology or any other branch of medicine. Where frozen sections are routine, no one gives a second thought when the pathologist defers a diagnosis for further study. When, however, the same pathologist does render a definite opinion, the surgeons have the utmost confidence in his decision and perform their surgery accordingly. When the cytologists assume such an attitude, and render their opinions as positive, doubtful (please repeat) and negative, then the cytologic method will be well on its way to maturity. Also, one must remember that in this type of examination a report of negative results does not rule out malignant disease, and if the clinician is still in doubt, he should request additional examinations.

As for using the vaginal smear as part of a semiannual check-up on women over 30 years of age, one can readily see that such a program is not practical. All of the pathologists in the country, working full time on this procedure alone, could not complete such an examination.

Analysis of Series

The present study reports 446 cases examined by the cytologic method. The results in 30 cases are reported as positive, in 8 as doubtful (repeat), and in 408 as negative (table 1). Of the 14 cases listed under miscellaneous, the 4 positive results are from 3 lymph node aspirations and 1 liver aspiration. The negative smears were taken from 1 pancreatic aspiration, 1 prostatic aspiration, 1 scrotal aspiration, 2 lymph node aspirations, 1 caudal canal aspiration and 2 breast nipple aspirations. Also included in this group are smears from a bladder neck and vocal cord.

Table 1.—Summary of 446 Cytologic Examinations

Material	Positive	Doubtful (Repeat)	Negative
Pleural Fluid	7	4	19
Ascitic Fluid	8	0	4
Cervix	4	2	29
Vaginal Secretion	2	2	28
Urine	3	0	296
Bronchus	1	0	9
Stomach	1	0	9
Sputum	0	0	4
Miscellaneous	4	0	10
Total	30	8	408

In summary, one can say that cytologic examination is a valuable adjunct to the diagnostic armamentarium of the pathologist. It is effective only when employed as a single rung on the ladder of diagnosis, and must be evaluated only by experts. Any attempt to use cytologic examination

as a sole diagnostic aid, particularly by untrained personnel, can lead only to chaos and condemnation of the method by physicians and public alike.

Summary

Cytologic study of body fluids and secretions is a valuable aid in the diagnosis of malignant disease.

It is a difficult and time-consuming procedure and must be left in experienced hands.

Greatest accuracy will be attained by using cytologic studies in conjunction with tissue sections, and sections of blocks made from centrifugates.

A definite opinion cannot be rendered on all slides.

Slides should be reported as negative, doubtful (please repeat) and positive.

Positive reports should be confirmed by biopsy if possible before surgery.

No known stain is specific for malignant cells, and the usual stains employed by the examiner in his routine work are best for him to use.

There is no single morphologic characteristic which will differentiate a malignant from a non-malignant cell.

The method must be tried and evaluated, and its value in the diagnosis of cancer must be established by each person employing it.

Types and locations of malignant lesions cannot usually be established from a cytologic study.

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Discussion

DR. V. MARKLIN JOHNSON, West Palm Beach: I certainly have enjoyed this paper by Dr. Murray. I think that most of you in the audience will consider it a critical assay of this particular method of early cancer diagnosis. Moreover, I do not believe anyone can refute any of Dr. Murray's statements.

The question which arises, and which I would like to discuss, is who makes these examinations and on whom should they be made?

Most of us who have practiced pathology believe that we have the inside track on this particular type of diagnosis. That is not my present opinion, because I am of the opinion that while we have dealt in tissue pathology for years, let us say, cytologic diagnosis as used by some really opens another field.

The sections on the slides which Dr. Murray has shown were included under the title of cytologic diagnosis, but most of those showed little bits of tissue. Some of us have gone to centers where this diagnostic procedure has been taught, and I am sure that all of us who have been there have learned much.

Another debatable issue is the method of reporting results. Some propose a report including five designations, namely, Classes I to V. This is the method used by Dr. Papanicolou. The first two designations indicate no evidence of malignant disease.

The Boston groups, on the other hand, favor Dr. Murray's concept of either negative, doubtful or positive. I think we went through this same sort of game in the field of serologic examination. We used to report 1 plus, 2 plus, and so forth. Finally, we came around to the universally used method of negative, doubtful or positive, and when doubtful, repeat. I think that is most sensible. Many people other than members of the profession have entered this field of diagnosis. I would hesitate to get into any argument as to whether they should or should not attempt it. It should suffice to say that one should know his limitations, and if he is not equipped with knowledge to do these examinations, he should recognize it and should so state to the doctor who submits smears for examinations.

The next question is, on whom should these tests be made? In Dr. Murray's paper, which I had the pleasure of reading last night, I think he mentioned the fact that it this method were attempted without screening in all examinations of the female genital tract, there are not enough pathologists trained to cover the number of examinations which would become necessary. I think for this group, the reason that the Scientific Committee selected this paper on pathology was to bring to you some solution to that problem.

Most cancers of the uterus are accompanied by bleeding and by a certain amount of leukocytic exudation. You might say to me, what about early carcinoma? I think analysis will show that in some of these cases bleeding did not occur. Nevertheless, if you, as physicians, would check by cytologic examination and biopsy, whether or not the lesion is visible, every case that you see in which there is bleeding or any type of bleeding plus exudation, I think that alone would uncover many cases of carcinoma of the female genital tract that now go unnoticed until it is almost too late to do anything about it.

I have enjoyed discussing Dr. Murray's paper.

DR. JAMES N. PATTERSON, Tampa: Dr. Murray has covered, I think, in the short space of time allotted him, quite adequately the subject of the cytologic method of diagnosis. Most pathologists prefer, if given a choice, to examine biopsy specimens rather than smears because of the opportunity to study the relationship of the cells and stroma as well as individual cells, and because they do not have to rely on the structure of the individual cells alone for diagnosis. There are times, however, when it is not practical or may even be impossible to obtain a biopsy, and in such cases the smear method is indispensable. There is no question that this procedure has proved itself of great value in many cases.

One strongly positive smear should never be disregarded even though repeated smears or even a biopsy or two give negative results. The patient in such a case should be watched closely because in many patients of this type there afterwards develops a full-blown, easily recognizable, cancer. The pathologist can be of the greatest service in recognizing early malignant lesions still in the amendable stage and yet without objective finding recognizable by a physician. The Papanicolaou test has made many of these early diagnoses possible.

One of the handicaps of the smear method is the fact that it is a time-consuming examination for the pathologist while a biopsy is much less tedious and requires less time. The time element is most important in diagnosis by the smear method.

Dr. Murray should be congratulated on bringing some

of these difficulties to your attention. The smear diagnosis is of importance, but it certainly should supplement and not replace the time-proved biopsy method.

DR. MURRAY, concluding: I should like to thank Dr. Johnson and Dr. Patterson for their discussions and ideas, and I would particularly emphasize what Dr. Patterson said about one positive smear. One definitely proved positive smear would certainly indicate that that patient should be followed closely.

In some cases, it has been proved that this type of examination can be almost 100 per cent successful, and it has been followed by surgery by one large group in the country.

In closing, let me say that this is a valuable method, but it must be used as an adjunct, along with physical examination, other diagnostic procedures and biopsy. No one would want to submit to surgery on any one positive factor. The more facts we can assemble before submitting the patient to surgery, the more certain we are to do the patient good and certainly not harm.

Chronic Pyuria in Infants and Children

MEREDITH CAMPBELL, M.D.
NEW YORK

Although it has been clinically convenient in the past to indicate urinary infections as pyelitis, the designation should be pyuria, acute or chronic, until the anatomic diagnosis is established. In the vast majority of cases of renal infection, loosely designated as pyelitis, the fundamental pathologic lesion is an interstitial suppurative pyelonephritis. Yet pyuria may exist when no organisms can be demonstrated in the body, and here obstruction, calculus or trauma is the usual cause; amicrobic pyuria has also been attributed to virus infection.

Chronic pyuria may follow an apparently satisfactory clinical recovery from acute urinary infection or may be discovered at the time of routine examination of the urine when some nonurologic manifestation is under investigation. In the study of urinary infection in patients of all ages, in the urinalysis the pus, blood and bacterial content are of primary interest. Yet diabetics are particularly prone to staphylococcic infection. When urinary infection is under investigation, aseptic collection of the specimen is of prime importance, and in females of all ages only catheterized specimens should be studied, both for the microscopic examination and bacteriologic culture as well. In the male, a satisfactory specimen can usually be obtained by retraction of the prepuce followed by liberal washing of the glans penis and separated meatus with mercury oxycyanide or bichloride 1:1000, following which the patient voids. After a few cubic centimeters of urine have been passed, a sterile receptacle is introduced into the stream to collect the specimen for routine analysis and bacteriologic studies. If this technic cannot satisfactorily be followed, employ catheterization. It is notable that only those leukocytes which show the polymorphic or pawnbroker's nucleus should be identified as pus cells; more than 3 to 5 cells per low power field are abnormal. In the laboratory investigation, determination of the type and character of the invading organisms is essential from the therapeutic standpoint since upon this finding will rest the specific choice of chemotherapy or antibiotic therapy. Untold thousands of doses of penicillin have been administered in colon bacillus urinary infection, this antibiotic having no effect upon this group of organisms.

Urinary infection is the direct result of bacterial invasion of the urinary tract; the organisms reach the kidney chiefly by the descending or hematogenous route although unquestionably the ascending or urogenous route from infections of the lower part of the urinary tract may occur and notably when infravesical blockage occurs. The chief predisposing factor in the development of urinary infection is obstruction, which in children is predominantly congenital and of wide variety, ranging from stenosis of the prepuce or external urethral meatus to stricture of a renal calyx. Not only does obstruction predispose to the development of urinary infection, but once infection is established, its maintenance is favored by urinary stasis. Until the development of modern chemotherapy and antibiotic therapy, urinary infection could not be eradicated until the associated etiologic obstruction was eliminated. The bacteriologic cure of urinary infection by methenamine or urotropin alone suggested that no important ob-

From the Department of Urology, New York University-Bellevue Medical Center, New York, N. Y.

Read before the Florida Medical Association, Seventy-Sixth Annual Meeting, Hollywood, April 24, 1950.

struction was present. As a corollary and since urinary infection today can be cured even in the presence of pronounced urinary obstruction, patients thus benefited should not be discharged as cured until at least a satisfactory excretory urographic study has shown that the urinary tract is morphologically normal and free from obstruction.

Complete Urologic Examination

When persistent pyuria (pyuria lasting more than four weeks may be designated as chronic), has been demonstrated, intensive chemotherapy and/or antibiotic therapy should be employed according to bacteriologic indication, which in turn implies careful bacterial study of the properly collected specimen of urine. When two weeks of such intensive medical therapy fails to cure the infection as evidenced by at least two sterile cultures of aseptically collected urine, complete urologic examination should be carried out. This properly entails cystoscopic investigation usually with ureteral catheterization, divided renal function tests and bilateral retrograde pyelography. Only by such careful systematic study can the correct anatomic diagnosis be determined. Cystoscopic investigations carried out in thousands of infants and children have amply demonstrated that instrumental reactions in the young occur far less frequently following urologic investigation that they do in adults. In no instance should reluctance of the physician or parent to have the child subjected to such investigation be accepted as a contraindication to its performance when proper indications exist.

Therapeutic Measures

When the anatomic abnormalities and pathologic changes in the urinary tract have been determined, rational treatment will be directed toward correction of demonstrated lesions according to the specific indications; often this entails radical surgery. In many cases conservative therapy suffices, notably by instrumental dilation of a strictured channel. At the other extreme, nephrectomy, ureteronephrectomy or ureteroheminephrectomy is frequently required. The multiplicity of lesions etiologically associated with persistent pyuria is too extensive to permit detailed discussion here. Yet illustration by specific case citations cannot but impress one with the relatively high incidence of these various forms of urologic disease in the young, their debilitating morbidity, and the potentially high mortality they engender if permitted to persist.

Chief Etiologic Factors

Many of the renal lesions are secondary to ureteral disease and notably to obstruction. My associates and I have shown that about 2 per cent of all persons are born with some form of obstruction of the upper part of the urinary tract, and here congenital ureteral stricture rates first. Most of the strictures of this type, which are simply anatomic narrowings comparable to similar narrowings in the urethra, and the intestinal, biliary, pulmonary and cardiac and vascular systems, show no local inflammatory reaction except as secondary infection may have occurred. Congenital ureteral stricture is of the highest incidence at the ureterovesical junction, is next most frequent at the ureteropelvic junction, and is of the lowest incidence in the body of the ureter. We have found as many as three congenital strictures in one ureter. As a result of the obstruction, the proximal urinary tract gradually becomes dilated with the appearance of clinical hydronephrosis, in which, in turn, infection can always be anticipated.

Other obstructions at the pelvic outlet include aberrant vessels, notably anomalous lower renal polar arteries or veins passing from the kidney to the renal pedicle or more particularly to the aorta or vena cava respectively, and in crossing the ureter they may induce compression and obstruction. Periureteral fibrous bands or ureteral kinks may also cause blockage. In rare instances, congenital stricture of a renal calyx induces localized hydrocalyx. Other less common renal lesions include stone and renal tuberculosis. Parenthetically, 1 in every 50 cases of persistent pyuria in the young is due to surgical caseous renal tuberculosis. Much less frequently, infected renal tumor, persistent renal abscess or perinephric abscess causes persistent pyuria.

Ureteral reduplication occurs about once in every 150 patients and may be complete or incomplete, unilateral or bilateral. Often in this anomaly one ureter drains freely while the other is obstructed. This condition gives rise to hydronephrosis and hydroureter of one half of the reduplication which, infected, becomes infected hydroureter and infected hydronephrosis or may progress to pyoureter and pyonephrosis of the involved segment. Here ureteroheminephrectomy is the usual treatment indicated, with removal of the diseased half of the kidney and its ureter to leave the normally functioning segment and its normal ureter.

Ureterocele or intravesical cyst of the ureter is one of the commoner ureterovesical malformations and results from urinary pressure against a pinhole size ureteral orifice. In some instances the ureterocele is bilateral, and we have even found it reduplicated on one side. Moreover, the ureterocele may occlude the vesical outlet to cause urinary stasis and difficulty in urination or in females may even prolapse through the urethra. Cystographically the ureterocele is commonly demonstrated as an enormous filling defect in the cystographic outline of the bladder. Although cystoscopic incision of the ureterocele may establish free urinary drainage from above, the lesion is best excised either transurethrally or suprapubically.

Obstructions at the bladder outlet or peripherally in children are nearly all congenital, the notable exceptions being traumatic or gonorrheal urethral strictures, which fortunately are comparatively rare. At the vesical outlet, obstruction and vesical residuum may result from congenital contracture of the vesical outlet, spastic neuromuscular vesical disease, congenital valvular obstruction of the prostatic urethra, congenital hypertrophy of the verumontanum, urethral stricture and particularly congenital stenosis of the external urethral meatus. Of these lesions the last is by far the commonest and may cause obstruction as grave as that produced by any of the others mentioned. In many cases we have demonstrated the entire urinary tract to be widely dilated behind the congenitally stenosed urethral meatus.

Prime Therapeutic Aim and Test of Cure

In all of these cases the diagnosis can readily be made by complete urologic investigation, and removal of the obstruction is the primary surgical consideration. In some instances conservative instrumental dilation suffices, but commonly surgical division of stricture or transurethral resection of other congenital obstructing lesions of the lower tract is necessary. Yet irrespective of the nature of the obstructing lesion and the completeness of its eradication, no patient should be discharged as cured until at least two negative cultures of aseptically collected specimens have been obtained. If this test of cure is rigidly observed, recurrence of urinary infection will indeed be rare and mild. Failure to sterilize the urine invites recurrent exacerbations of urinary infection which, as in the antecedent history of the patient, periodically dot his career and increasingly scar his kidneys.

Summary

The more important considerations in the problem of persistent pyuria in the young are considered. Complete urologic examination is indicated in practically every case. Urologic treatment will be based upon the demonstrated pathologic abnormalities; eradication of the obstruction is the prime therapeutic aim, and no patient should be discharged as cured until free drainage has been established and the urine has been sterilized.

140 East Fifty-Fourth Street.

ANNOUNCEMENT

MEDICAL DISTRICT MEETINGS

The Chairman of the Council, Dr. Lloyd J. Netto, has announced that the dates of the four Medical District meetings have been officially set by the Council.

Every member of the Association is urged to make a note of these dates and make plans to attend the meeting in his district and any of the other three meetings as desired.

Marianna, Monday, Oct. 30, 1950
Ocala, Wednesday, Nov. 1, 1950
Fort Myers, Thursday, Nov. 2, 1950
W. Palm Beach, Friday, Nov. 3, 1950

The Prediabetic State and Its Clinical Importance

Joseph H. Barach, M.D.
Pittsburgh, Pa.

If we are to consider the prediabetic state, let us first of all define our terms; otherwise we may find ourselves thinking along different lines and even lose ourselves in a tangled maze. By prediabetes, for the purpose of our discussion today, I mean the background of the person in whom sooner or later will develop the full blown picture of the disease. It is not always a simple matter to state positively that a certain condition, common to many persons with diabetes, is actually a cause leading to the disease, or that it is an effect of the hidden diabetes which is on the way. To make this point clear, I would pose the question: Is the obesity which occurs in 80 to 90 per cent of our diabetic patients a cause of diabetes or does it actually represent an early stage of the disease? Unless you have given the question considerable thought, I would hasten to suggest that you do not answer it too quickly even to yourselves. With this example in mind, a broad consideration of the many facts which are found in the history of the diabetic patient allows the building up of a background which is typical for the average person with diabetes. Until the day comes when the specific and ultimate cause of diabetes has been found, and we can direct all of our therapeutic aims and efforts at correcting or removing the underlying causes of this disease, our greatest opportunity of helping the diabetic patient lies in a thorough understanding of the prediabetic phase of this disease. In this prediabetic phase or in the preclinical phase of diabetes, even if we cannot avert the disease entirely, we assuredly can delay it for a considerable time and perhaps for a long time in many patients.

There is much that is unknown in the history of the person with diabetes. One may well ask why it is that diabetes may make its appearance in a child 1 year old, whose organs and tissues have not yet been subject to wear and tear, and in another, a man or woman at the age of 50 or 60 or even 80 to 90 years, who has to a great extent completed the cycle of life. Again I would suggest — let not your answer to this question be given too quickly nor with too much certainty.

In this sense, we approach the problem of the hour to see how useful we can make it. With a broad understanding of this problem and an intense drive for the detection of the disease in its earliest stages, we assuredly believe that a great deal can be accomplished.

Age at Onset

There is a certain chronology to disease. There are those diseases which belong to childhood, those of middle life and those which naturally occur in the senescent period of life. Diabetes makes its appearance most frequently between the ages of 35 and 60, and that is the time when we should be on the lookout for it. Once it becomes known that the patient is potentially diabetic, the only thing left to us, if possible, is to delay the onset of the disease, which, by all that we know, can be done. As time goes on, we hope to control such cases more and more, by early detection and control of those factors during the prediabetic state.

Sex as a Factor in Diabetes

There are nearly 6 females to 4 males with diabetes. This ratio means that if we are to reduce the total number of persons with this disease, we should help to create the conditions which tend to delay or prevent its onset. We should do what is necessary to control the tendency to obesity, particularly in women. We should teach proper dieting, interest in outdoor life and the advantages of early diagnosis of diabetes. It should be realized that women suffer all the ravages of this disease, and by actual count, proportionately more women suffer lesions of the extremities than men.

From the University of Pittsburgh, School of Medicine.
Read before the Diabetes Seminar, Jacksonville, March 28, 1949.

Occupation

As we have always known concerning the mode of living of the diabetic person, the history usually is one of indoor living, and a nervous life as compared with the man or woman whose physical and mental activities are equalized or balanced and in physiologic proportions.

It is no accident or coincidence that more male restaurateurs have diabetes more frequently than others. Whatever the compelling forces in our daily lives may be, nature insists on her own established order, inexorably, and does not yield nor abandon her laws of cause and effect.

Inheritance

In the English-speaking world at least, scientific workers believe in the forces of heredity. We still believe that there are such things as chromosomes and genes involved in the concept of heredity, regardless of Lysenko in Russia.[1] We still believe that Gregor Mendel in 1865 stated one of nature's basic truths when he enunciated his concept of segregation and transmission of characters. On the basis of this concept, as best we know it, diabetes is an inheritable disease, and it is transmitted from one generation to another. In studying our case histories, we find that 44.5 per cent of our patients give a history of a known blood relative having diabetes. Personally, I believe the figures would be much higher if our patients actually knew more of their relatives and their life histories. Out of this array of studied facts, Pincus and White[2] have evolved dicta, which doubtless are familiar to most of you already. If we could utilize this knowledge of inheritance as a guide, we might reduce the incidence of diabetes considerably, in a comparatively few generations. See figure 1.

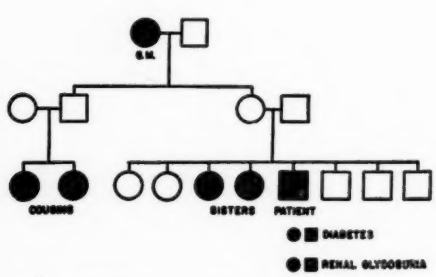

Fig. 1. — Inheritance — diabetes and renal glycosuria.

Obesity

More than 80 per cent of diabetic patients give a history of obesity. I consider this obesity as part of the prediabetic state. I have seen diabetic children 4 or 5 years of age who had gone through periods of obesity, however short their lives, prior to the onset of glycosuria.

Both in the adult and in the child, however marked the tendency, whether it is inherited or acquired, obesity is controllable, to a large extent, by diet restriction. Without greater food intake than actual requirement, there would be comparatively little if any obesity. We do not know all that we would like to know about the pathologic physiology of obesity in the prediabetic and in the nondiabetic person; but the obesity itself and its clinical implications are sufficiently understandable to realize its importance and its undesirability. Certainly an increase of 20 to 70 pounds in body weight is something to be taken seriously, by both doctor and patient.

Glucose Tolerance in the Prediabetic Person

In a diabetic family, all obese members should be studied for abnormal glucose tolerance (fig. 2). It is also good practice to study other obese persons with that in mind.

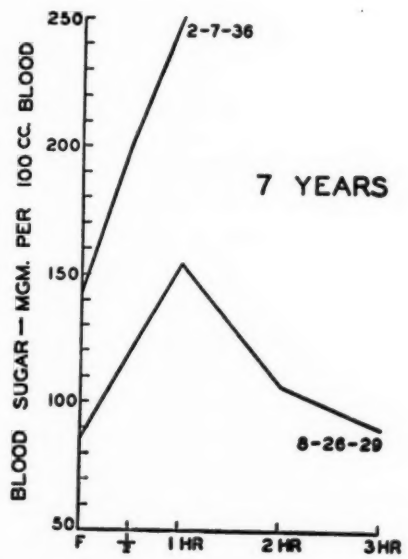

Fig. 2. — Advancing diabetes.

If the tolerance test gives positive results, then the indication for a restoration to normal weight is imperative; and that, of course, means strict attention to diet. If the test is found to produce a normal curve, one may not assume too readily that it will always be normal.

Any way one takes it, obesity is a metabolic evil, it should be held in suspicion, and it should be avoided or corrected if possible.

Blood Pressure

Little need be said concerning blood pressure in the diabetic or in the prediabetic patient. A study of our diabetic patients revealed that 56.8 per cent had normal pressure, and in 32 per cent there was hypertension. Most of our patients were men and women between the ages of 40 and 60, in whom hypertension is to be expected.

It cannot be said that diabetes of itself is a cause of hypertension, nor that hypertension is a cause of diabetes. Actually, at the height of the diabetes, both hyperglycemia and polyuria are likely to be accompanied by a lowered arterial pressure.

The Nervous System

Insult to the nervous system, whether it be somatic or psychic, has its disturbing effects, in so far as hyperglycemia and glycosuria are concerned. If we add up a lifetime of such nervous impacts, day in and day out, it is not difficult to visualize what the sum total may be. As an example of injury to the nervous system, every physician and surgeon is aware of the comparative frequency with which diabetes appears in cases of extensive fractures of bones. In regard to physical injury to the nervous system, figure 3 shows glucose tolerance curves after brain concussion and brain tumor. A mild case of diabetes becomes a severe case after fracture of the skull.

A recent experience illustrates the psychic aspect. The patient in this case is mildly diabetic. Ordinarily his disease is kept under good control by means of a maintenance diet, without insulin. Recently on returning from a meeting where he presented a discussion at one of the professional societies, he found that he could get an earlier train home, and it was necessary that he exchange his Pullman reservations. He hurried to the ticket office, where he had to stand in line to make this

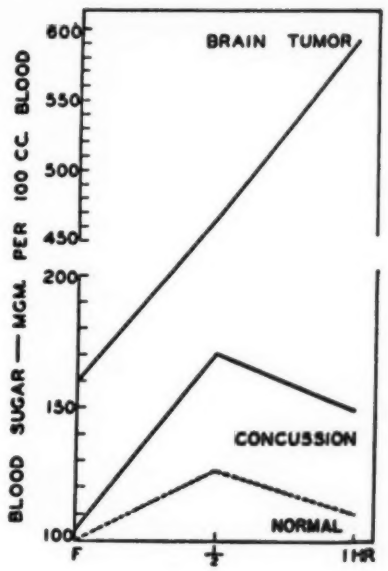

Fig. 3. — Brain injury — diabetes.

exchange, while the ticket agent was leisurely making a reservation for a passenger to California.

After waiting forty minutes, the professor blew up and had a fight with the ticket agent and then with the station master. He missed the train, of course. The following morning, his urine sugar was 4 plus although the urine had been normal for a week before this incident. When I saw him the next day, he laughed at himself as we studied his urine sugar chart. His only words, and mine, too, were, "Of course, of course, that is the expected thing." I have seen this happen thousands of times, brought about in a thousand ways, all of which verifies the old adage: "In Wall Street, when stocks go down, sugar goes up." This is an example of what we mean by the "nervous" life to which so many of us are exposed from day to day.

Diseases of the Liver and Gallbladder

The occurrence of almost 200 cases of disease of the liver and gallbladder in a series of 1,300 diabetics bespeaks a close clinical relationship (table 1).

Functions of the pancreas, liver and gallbladder suggest a physiologic and pathologic interrelationship. In figure 2 the glucose tolerance curves in a patient with disease of the gallbladder show a prediabetic state of seven years' duration. This, I am sure, occurs more frequently than is generally recognized. I have a group of such cases collected over the years.

Table 1.—198 Cases of Liver and Gallbladder Disease in 1300 Diabetics

	Cases
Preceding jaundice	55
Gallbladder disease	58
Gallbladder removed	26
Diseased liver — demonstrable	26
Enlargement of liver (simple)	18
Abscess of liver	3
Cirrhosis of liver	2
Bronzing of skin, distinct	6
Hemochromatosis, positive	4
Total	198

A Lesson from China

By all the evidence that we can gather, there is much less diabetes, decidedly less arteriosclerosis and almost no atherosclerosis with its coronary disease, detected in the anatomic and pathologic laboratories of Chinese hospitals and medical schools. Why is this? If for no other reason than to stimulate your thinking along these lines, I should like to recall the following:

1. Diabetes in China, especially in Southern China and among the poor, is a mild disease clinically.[3]

2. Chinese diabetics require smaller doses of insulin.

3. Many Chinese are sensitive to insulin and have reactions more frequently and more severely than do patients in this country.

4. In China diabetic coma seldom occurs, and diabetic gangrene not at all. No one seems to encounter cases of coronary occlusion in the Chinese. High arterial pressure is comparatively uncommon.

5. The Chinese as a people work more and they work harder than we do, to earn their living. They have few labor-saving machines.

6. The Chinese live on a high carbohydrate diet. Their diet is low in animal protein and low in animal fats. Milk and butter as daily food are practically unknown in China. This diet gives them a low fat and a low cholesterol intake. In the United States there is one cow for every five persons, and dairying is the third largest industry in our agriculture.

7. Reports from the Department of Physiology, Tsing Hua University, revealed that in a group of 11,388 Chinese soldiers, the average diet was carbohydrate (rice) 762 Gm., vegetable protein 76 Gm. and fat 10 Gm., with a total of 3,442 calories per day. Chinese students in this school subsisted on carbohydrate 342 Gm., protein 41 Gm. and fat 8 Gm., a total of 1,604 calories.

The lesson from these observations might well be that a diet high in carbohydrate, relatively low in protein which is mainly vegetable protein, and inordinately low in fat is the standard for a people who work hard physically and are seemingly free of diabetes and almost completely free of its complications and sequelae.

Various observers have reported the comparative scarcity of atherosclerosis and arteriosclerosis in Central America and in South Pacific areas and in certain parts of India where the diet is decidedly low in meats and fats. These are significant clinical observations and deserve most careful study in a time like ours when the death rate from arteriosclerosis in all of its phases is appallingly high.

Conclusion

In so far as diabetes is concerned, I am inclined to believe that a real therapeutic advance will come with a lowering of the animal fat portion of the diet and replacement of a portion of the animal protein of our present day diets with vegetable proteins, at the same time keeping the total diet with all of its required nutrients at a good maintenance level. Manufacturers of insulin will tell you that the pancreas of animals fed on rich grasses has a greater yield than that of those which have subsisted on lean pastures; and I have been informed that extra feedings before slaughter increase the insulin yield of the pancreas up to 25 per cent. It is known the world over that the incidence of diabetes is low where food is scarce, and it is not a mere coincidence that this country, the best fed land in the world, has the highest incidence of diabetes, its sequelae, and also its complications. What we see from day to day in our clinical work is that a high blood cholesterol is definitely lowered in most cases after two weeks in the hospital on a weighed and measured diet. Our hope is that hyperlipemia or hypercholesterolemia in most patients will be found to be a reversible process.

By this last statement, I do not mean that cholesterol of and by itself is the specific cause of the complicating lesions. What I do believe is that hyperlipemia and hypercholesterolemia are part of that process, and that they may serve as an index to what is going on, but is not yet fully understood.

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Acute Renal Insufficiency: A Review

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Acute renal insufficiency as a specific clinical and pathologic entity has been the subject of much discussion during the last few years because of studies made into its basic nature and because of a revival of interest in therapeutic measures for its management. Since it is a problem that may confront any practitioner and one which can be solved by proper management, it may be valuable to review the problem to date.

In 1946, Lucke[20] reported identical pathologic findings in a series of cases of acute renal failure associated with various disease states. He named this pathologic entity lower nephron nephrosis. Multiple synonyms (table 1) have been used to describe this condition.

Table 1.—Synonyms of Lower Nephron Nephrosis

1. Hemoglobinuric nephrosis
2. Acute parenchymatous nephritis
3. Acute tubular nephritis
4. Acute toxic nephrosis
5. Post-traumatic renal injury
6. Renal anoxia syndrome
7. Crush syndrome
8. Shock kidney

Some of the disease states with which lower nephron nephrosis has been associated are shown in table 2.

Table 2.—Lower Nephron Nephrosis Associated with

1. Intravascular hemolytic reactions[27]
   a. Incompatible transfusions
   b. Blackwater fever
   c. Toxins
   d. Transurethral prostatectomy
2. Crushing injuries
3. Burns
4. Nontraumatic muscular ischemia
5. Heat stroke
6. Toxemia of pregnancy
7. Uteroplacental damage
8. Abortion
9. Sulfonamide intoxication
10. Alkalosis
11. Poisoning with vegetable and chemical agents
12. Surgery with hypotension
13. Hepatorenal syndrome

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The important initiating factor in these conditions appeared to be destruction of muscle and/or blood, shock, and loss of fluids and electrolytes from vomiting, or diarrhea, or both.

Pathologically, the kidneys are enlarged and heavy; the cortex is pale, the medulla dark. Histologically, there are focal degeneration and necrosis of the distal segments of the tubules with or without brown casts of heme compounds in the lower nephron and collecting tubules. There is little or no change in the glomeruli or proximal tubules. Liver damage may or may not be prominent. In the nephroses of mercury toxicity and carbon tetrachloride toxicity, the pathologic findings in the kidneys are more extensive since the entire tubule shows necrosis. From a clinical and physiologic point of view, however, these conditions should be grouped with the true lower nephron nephroses. Regeneration of tubular epithelium begins about the fifth day; if death does not result from mismanagement of fluid and electrolyte balance or potassium intoxication, complete repair will ensue. This concept of a self-limited disease is the all-important one in approaching the problem of therapy, because the patient who can be tided over until regeneration of the tubular epithelium can take place will recover completely.

The pathogenesis of the renal lesion in all except the true toxic nephroses is not definitely known. There are a number of theories.[4,11,13,23,26,27] The consensus, however, is that renal anoxia is the main factor. The liberation and precipitation of heme compounds and the effect of nephrotoxic substances derived from injured tissue are also considered important. The mechanism of the initial oliguria and anuria is believed to be secondary to shock, which produces renal vasoconstriction and decreased blood volume and thus reduces glomerular filtration. Later oliguria and anuria are maintained by an increased intrarenal

pressure due to dilatation of the tubules, interstitial edema and inflammatory exudates, by obstruction of the tubules, and by passage of the glomerular filtrate through the damaged tubular walls. The majority of workers believe that the last named condition is the most significant in the maintenance of the oliguria and anuria.

With or without a period of shock, depending upon the associated conditions, nausea, vomiting, weakness, malaise, and sometimes pain in the abdomen and back develop, and then with an insidious or abrupt onset the oliguria or anuria appears. The subsequent clinical course depends largely upon the therapy. If fluid balance is not maintained, edema, hypertension and cerebral symptoms of coma, irrational loud talk, muscular twitching and convulsions appear. The last named symptoms are frequently incorrectly ascribed to uremia rather than to the cerebral edema of water intoxication. Death may result from pulmonary or cerebral edema, or rarely later in the course of the disease, from potassium intoxication. In patients who recover after a period of anuria, the urinary output gradually increases to the point of massive diuresis. This diuresis may be associated with collapse and with the clinical state of salt depletion and dehydration. Dehydration and hypochloremia may rarely be the cause of death in this period of diuresis when recovery seems imminent.

The biochemical and physiologic alterations have been carefully studied and reported in detail by Mallory and his co-workers,[24] and Burnett and his associates.[6,7,8] Briefly, they found the expected rise in the serum nonprotein nitrogen, urea, uric acid, creatinine, potassium and phosphate with the reciprocal fall in serum calcium. The serum carbon-dioxide combining power frequently fell slowly during the course of the anuria, but the authors warned against too vigorous treatment of this metabolic acidosis, because the blood hydrogen-ion concentration was usually normal and in their cases the patients tolerated alkalies poorly. The cause of this metabolic acidosis is not known. If it were due to low total base, the carbon-dioxide combining power should be lower in those cases with a low plasma sodium, and if it were due to substitution of chlorides for carbon dioxide, the plasma chloride should be high; yet neither condition obtains. They did not study the serum levels of sulfate and other acids. Their failure to do so is unfortunate because Wakefield, Power and Keith[46] have reported a moderate to great degree of sulfate retention as a factor in the acidosis of renal insufficiency. Abnormalities in these components might have explained their abnormally low total anion determinations.

The most interesting findings were in regard to the sodium and chlorides. The plasma levels of both of these substances were frequently low and were dependent in part upon the salt intake. The frequent absence of this correlation leads to the belief that there must be a shift of these elements from the intravascular bed to other extracellular or intracellular reservoirs. The fall in carbon-dioxide combining power was equally severe regardless of the serum levels of sodium and chloride, and there was no evidence that diminished sodium or chloride concentration in the plasma affected the course of the disease. This latter observation is especially important in the management of these cases because an attempted correction of these abnormalities, which are of themselves apparently of no great consequence and which frequently are resistant to therapy, may result in an excessive infusion of fluids and electrolytes with resulting pulmonary edema.

The blood volume increases markedly even in the absence of edema. This increase is partly related to a discrepancy between the fluid output and fluid intake. It is not a simple hydremia since the plasma protein and hematocrit are not lowered. Therefore it must represent a disturbance in the maintenance of normal extracellular fluid volume. The importance of this observation is self evident, for the administration of excessive quantities of fluid to patients who already have an increased blood volume can probably do nothing toward stimulating a return of renal function, but can only induce pulmonary edema.

These patients show great impairment of renal function. Both before and after recovery from the anuria, there is inability to concentrate the urine, and frequently there is failure to produce a highly acid or alkaline urine even in the presence of severe metabolic acidosis or alkalosis. The excretion of chlorides and other solids is markedly reduced. In addition, the urine contains varying amounts of albumin, granular or pigment casts, and frequently heme compounds. As recovery occurs, the albumin disappears and the solids increase, but the impairment of concentration may persist for months. The period of diuresis is associated with great loss of water, sodium and chloride to the point of a dangerous hyponatremia and hypochloremia.

Treatment

The primary concept in the management of acute renal insufficiency of the type described is a realization that if the patient can be given successful supportive treatment for one to three weeks, regeneration of damaged kidney tubules with ultimate complete recovery will take place. It therefore behooves the physician to so plan his therapy that it will in no way harm the patient or jeopardize the expected healing.

Recent reports have suggested several methods of internal and external hematodialysis, such as peritoneal irrigation,[1,15,48] artificial kidney,[2,16,18,-22,33] and lavage of the gastrointestinal tract,[25,34,35,45] as a substitute for renal function during the period of anuria. There have also appeared numerous reports on conservative medical management in these cases with emphasis on fluid restriction.[5,10,28,40,42,43] The various methods of hematodialysis have proved capable of removing electrolytes, products of protein metabolism and certain toxins from the blood stream, both in experimental and clinical evaluations. This aspect of the problem of the management of renal insufficiency has been reviewed elsewhere;[1,15,18] so it will not be discussed in detail in this paper.

It will suffice to point out that the disadvantages of these methods are so great that some workers[32] have given them up completely, preferring to employ medical management. The chief disadvantage in all of them is the absence of any selective ability in the dialyzing membrane. This results in either overhydration with excessive intake of electrolytes and edema or in the loss of water and electrolytes with dehydration, shock, acidosis or tetany. These factors can be partially controlled by varying the composition of the dialysate solutions, but only partially so, because the electrolyte pattern of both the blood and the dialysate is constantly changing, making fine adjustments impossible. This fact necessitates frequent blood chemistry determinations and the correction of detected abnormalities by intravenous infusion of appropriate solutions and by changes in composition of the dialysates. Additional deterring disadvantages evolve from the technical difficulties presented by the complexity of the equipment, the maintenance of sterility, and other factors. Of the three methods of hematodialysis, irrigation of the gastrointestinal tract is the simplest and most generally applicable and may have a limited use in patients with oliguria or anuria if dangerous hyperpotassemia develops, as will be brought out later.

Although fluid restriction was first suggested by Wakeman[47] in 1932, it was not until publication of the reports of Peters,[36] Lattimer,[19] and Kugel[17] in 1945 that this principle of management received much credence. Peters[36] based his recommendations on the concept that the chief factor in the production of the anuria was increased intrarenal pressure and that excessive fluids hampered recovery by producing or increasing interstitial renal edema. While the majority of workers now believe that the interstitial edema is not the chief factor, some agree that excessive fluids do increase the intrarenal edema and are therefore deleterious. Lattimer[19] based his recommendations on autopsy findings of pulmonary edema and cerebral edema rather than uremia as the cause of death in the majority of cases. He correctly ascribed these findings to excessive fluid intake. Kugel[17] also based his opinion on the analysis of autopsy findings and described 2 cases successfully managed by fluid restriction. Barksdale[3] in 1946 came to identical conclusions after analysis of other autopsy data.

Mallory and his associates,[24] and Burnett and his co-workers[6-8] put the restriction of fluids and electrolytes on a scientific basis with their findings of increased blood volume, low serum carbon-dioxide combining power without change in blood hydrogen-ion concentration, absence of apparent harmful effects of hypochloremia and hyponatremia and the harmful effects of alkalies. Burwell, Kinney and Finch,[9] Thorn, [43] and Reuben[38] urged fluid restriction and used the reports of successful application to cases, analysis of mortality figures, and theoretic consideration as the basis for their contention.

The reports of Muirhead and his co-workers,[28-32] Coller, Campbell and Iob,[10] and Strauss[40,41] all urged the systematic conservative approach to treatment with the so-called "three phase management," in which fluid restriction during the period of anuria and oliguria is an integral part. Muirhead and his co-workers[28-32] were the first to describe clearly the three phases of the syndrome, namely, (1) (first day) injury, (2) (first to fourteenth day) anuria and (3) (eighth to sixteenth day) salt-losing diuresis, and to give a systematic therapeutic program for each phase of the syndrome. Although there are minor differences of opinion as to the details of treatment in these cases, especially of the anuric phase, there is surprising uniformity of opinion concerning the major aspects.

FIRST PHASE: INJURY. — The first phase, that of injury involving shock, hemolysis and tissue destruction, should be approached initially from the point of view of prophylaxis, such as by prevention of hemolytic reaction and by prompt treatment to prevent shock. If the renal injury is not prevented, then the underlying condition should be treated as vigorously as possible to minimize the injury with sufficient blood, plasma and electrolytes to correct anemia, shock, dehydration and acidosis or alkalosis. Frequently, 5 to 6 liters of fluid of one type or another is needed in this initial period and can be given without fear if the type and quantity are determined by a careful analysis of the clinical and chemical aspects of the case. Whole blood is preferable to plasma in most cases.

SECOND PHASE: ANURIA.—During the second phase when oliguria and anuria are present, the fluid balance should be maintained. This can be ascertained by daily weighing and by detailed and complete studies of the fluid balance. The amount of fluid given per day should meet the insensible loss through the skin and lungs (which will vary with the body temperature, the external temperature and the humidity) and the loss by urine, stool and vomitus. Strauss[40] calculated the daily water deficit of an afebrile anuric adult to be 530 cc. as follows:

Insensible loss	1,000 cc.
Water of oxidation (from metabolism of body issue)	470 cc.
Daily water deficit	530 cc.

He therefore suggested that 750 cc. of 15 per cent dextrose in distilled water plus a volume of physiologic saline solution equal to the fluid lost by vomiting and diarrhea should be given daily during the phase of anuria. This is the smallest amount of fluid recommended, for most authors suggest 1,000 to 2,000 cc. daily. The smaller amount, however, seemed adequate in the cases reported by Strauss.[40] Probably 1,000 cc. plus the volume lost in urine, vomitus and diarrhea fluid should be the maximum amount of fluid permitted in a twenty-four hour period.

Although most authors suggest that the oral route of administration is preferable because of less danger of vascular overload, Strauss[40] urged only intravenous therapy with nothing by mouth. He believed that vomiting is increased by oral administration of food or fluids. Muirhead and Hill[29] thought that much of the nausea and vomiting is due to water intoxication so that if fluids are managed correctly, nausea and vomiting will not occur and foods and fluids can be used orally throughout the illness. It seems probable that once vomiting has stopped and the nausea is not severe, the oral rather than the parenteral route should be used. In general the fluid should be low in sodium content. The solution most frequently given was 5 to 10 per cent dextrose in water. More hypertonic solutions were not given because of their tendency to increase blood volume. Strauss[40] and Thorn[48] used the slow intravenous infusion of 15 per cent dextrose in water to increase the caloric intake and thus minimize endogenous protein breakdown. They noted no harmful effects from this hypertonic solution. Others have used 25 to 50 cc. of 50 per cent dextrose intravenously, slowly, for similar purposes, but this stronger solution probably has no virtue and may cause venous thrombosis. When oral feeding is used, the diet should be of high caloric, low salt content. The protein content should be drastically restricted.

The sodium chloride intake should be carefully restricted in all cases. Barksdale[3] took exception to this restriction and gave 2.5 Gm. in the form of 300 cc. of physiologic sodium chloride solution daily. In general, only that volume of physiologic saline solution equal to the volume of vomitus should be given intravenously daily. In a few cases in which the patient is first seen late in the course of the disease with severe hypochloremia and hyponatremia resulting from previous therapy with large volumes of salt-free fluid, the intravenous administration of 3 to 5 per cent saline solution in 50 to 100 cc. doses may be of value. As was pointed out previously, however, the degree of hyponatremia and hypochloremia apparently does not alter the outcome and therefore no intensive therapy should be used to correct these abnormalities.

The use of alkali is the most controversial aspect in the therapeutic regimen. Strauss[40] at one extreme advocated treatment with 1 liter of 1/6 molar lactate, (or 5 per cent sodium bicarbonate if great hemodilution is present from previous mismanagement), only if clinical evidence of acidosis appears and is substantiated by laboratory determinations. Burnett and his associates[8] advised judicious use of alkali to relieve metabolic acidosis, but thought that the already present amount of alkali given in blood and blood substitutes will usually suffice. Others suggested that if the carbon-dioxide combining power falls below 40 or 50 mg. per hundred cubic centimeters, then

alkali therapy in the form of 4 to 6 Gm. of sodium bicarbonate by mouth or 500 to 1,000 cc. of 1/6 molar lactate intravenously should be given daily to correct this abnormality. Muirhead and Hill and their associates[28,29,31] urged the liberal use of alkali orally and had had no apparent complications from its use. Burwell, Kinney and Finch[9] suggested its use initially in all hemolytic reactions regardless of the blood chemistry findings. The evidence is such that unless clinical acidosis is present or the depression of carbon-dioxide combining power is great, it is probably best to withhold corrective measures since the therapy increases the sodium intake and vascular overload and may easily lead to alkalosis with increased renal damage. In addition the blood hydrogen-ion concentration is usually normal in these cases. The abnormal carbon-dioxide combining power is, therefore, more an indication of a compensatory mechanism than of a true acidosis.

Additional treatment during this phase consists of digitalization if cardiac enlargement or pulmonary congestion is noted, and the use of 10 cc. of 10 per cent calcium gluconate intravenously if tetany develops. Extreme caution should be used with both of these drugs, especially if they are used simultaneously because their metabolism is abnormal in the anuric patient and their synergistic effect is well known. If the phase of anuria persists beyond twelve to fourteen days or the amount of tissue destruction is great, there is danger that hyperpotassemia may develop. This can be detected by serum potassium determination in the larger medical centers or by taking electrocardiograms every few days and watching for evidence of potassium excess in the tracings. These changes are described in detail by Stewart, Shepard and Horger[30] as follows:

> There is first an increase in the amplitude of the T waves as the serum potassium rises, then a decrease in amplitude of the R waves with an increase in the amplitude of the S waves. As the serum potassium reaches a level of about 10 milli-equivalent per liter, there is a disappearance of the P waves and progressive depression of the RST segments with widening of the QRS complex, so that a smooth biphasic curve of the QRST appears. With the appearance of intraventricular block, the heart rate falls progressively, until there is cardiac arrest in diastole. Other types of anomalies have been described, consisting of changes in the ST waves, T waves and RST segments and also various cardiac arrhythmias.

Should hyperpotassemia develop, it must be treated by one of the methods of internal or external hemodialysis mentioned. Probably gastrointestinal lavage with electrolyte free hypertonic solutions and correction of the resulting disturbed electrolyte balance with intravenous injection of electrolytes is more generally available than artificial kidney or peritoneal irrigation.

Third Phase: Salt-Losing Diuresis. — The third phase in which a salt-losing diuresis is present, is characterized by an output of urine up to 5 to 10 liters a day and with a urinary excretion of sodium chloride up to 20 to 40 Gm. in a twenty-four hour period. It is essential during this phase to replenish all water and salt to prevent dehydration and collapse. Replacement is best managed on an eight hour basis for the amounts involved are so large and the rapidity of change so great that if twenty-four hour values are used, a serious state of salt depletion and dehydration may result. The urine volume and its sodium chloride content should be measured every eight hours by the bedside method of Fantus*,[13,44] which has an accuracy of ± 0.5 Gm. of sodium chloride per liter of urine. At first the intravenous route for replacement must be used, but later the oral route will suffice. Coller, Campbell and Iob[10] suggested that once the diuresis is established, Ringer's solution should be used intravenously until oral intake is possible, and then after each voiding a 0.5 per cent solution of sodium chloride and sodium bicarbonate in an amount equal to the urine volume should be taken orally at once to maintain fluid and electrolyte balance. Blood chlorides should be checked during this period to prevent hypochloremia. These determinations are of special value in cases of sulfonamide toxicity with anuria, for in certain of these cases the phase of diuresis is associated with sodium chloride retention rather than a salt diuresis,[21] and if sodium chloride is forced or even given in small doses, a fatal outcome will result. In these cases alone there must be given large volumes of sodium chloride free solution such as 5 per cent dextrose in distilled water intravenously or tap water by mouth during the phase of diuresis.

The results of this three phase management of renal insufficiency of the lower nephron type of nephrosis is surprisingly good as shown by a summary of the published reports (table 3). In the 46 reported cases tabulated, there were 7 deaths; in all but 2 of these there was restoration of renal function as shown by clinical and autopsy findings. In 6 of the fatal cases there were other irreversible pathologic changes of sufficient magnitude to militate against a successful outcome, regardless of the renal aspects of the case. In the remaining fatal case (37), there may have been irreversible brain damage for the patient remained semicomatose during the entire period.

Table 3.—Analysis of Forty-Six Cases

Author	Case No.	Diagnosis	Recovery of Renal Function	Outcome	Cause of Death	Revisibility of Disease State
Lattimer[19]	1-3	Hemolytic transfusion reaction	Yes	Lived		
	4-6	Sulfonamide reaction	Yes	Lived		
	7	Carbon tetrachloride toxicity	Yes	Lived		
Kugel[17]	8	Carbon tetrachloride toxicity	Yes	Lived		
	9	Hemolytic transfusion reaction	Yes	Lived		
Muirhead and others[28-32]	10-18	Hemolytic transfusion reaction	Yes	Lived		
	19	Hemolytic transfusion reaction	Yes	Died	Hemorrhage after recovery of renal function	Irreversible
	20-24	Transurethral resection with hemolysis	Yes	Lived		
	25	Carbon tetrachloride toxicity	Yes	Lived		
	26	Extensive burns and hypotension	Yes	Died	Diffuse brain damage, but regeneration of kidney tubules	Probably irreversible
	27	Hemorrhage and hemolytic transfusion reaction	Yes	Lived		
	28	Surgery and hemolytic transfusion reaction	Yes	Lived		
	29	Surgery and prolonged hypotension	Yes	Lived		
	30	Delivery and prolonged hypotension	Yes	Died	Diffuse brain damage but regeneration of kidney tubules	Probably irreversible
	31	Jaundice and relative hypotension	Yes	Lived		
	32	Amigen reaction and hypotension	Yes	Lived		
	33	Trauma and prolonged hypotension	Yes	Lived		
Coller and others[10]	34	Surgery and prolonged hypotension	Yes	Lived		
	35-36	Hemolytic transfusion reaction	Yes	Lived		
	37	Surgery and prolonged hypotension	Yes	Died	Died on 22nd day of dehydration, sodium and potassium depletion	Reversible
	38	Sulfonamide reaction	Yes	Lived		
	39	Hemolytic transfusion reaction	Yes	Died	Carcinoma of stomach with perforation; advanced healing of tubules	Irreversible
Strauss[40,41]	40	Surgery and prolonged hypotension	No	Died	Extensive brain hemorrhage	Irreversible
	41	Toxin, questionable nature	No	Died	Potassium excess and central necrosis of liver	Probably irreversible
	42-43	Toxin, questionable nature	Yes	Lived		
	44	Bichloride of mercury toxicity	Yes	Lived		
Reuben[39]	45	Bichloride of mercury toxicity	Yes	Lived		
Flipse[14]	46	Bichloride of mercury toxicity	Yes	Lived		

Summary: 46 cases, 7 deaths (2 without recovery of renal function)
40 cases with reversible lesion, 1 death
Corrected mortality 2.5 per cent

The cause of death in this case, however, seems to have been dehydration and sodium and potassium depletion during the phase of diuresis. With only 1 death in the 40 cases with reversible disease states, the corrected mortality was only 2.5 per cent. While this figure is probably too low since fatality figures are not published as frequently as are the successful outcomes, the results are far better than those obtained either by previous medical routine (35 to 95 per cent mortality) or by peritoneal irrigation (48 per cent corrected mortality). It must be remembered also that peritoneal irrigation is not likely to be used unless persistent anuria is present whereas in some of the medically managed cases the patient was not totally anuric.

Summary

Acute renal insufficiency due to lower nephron nephrosis is associated with a large group of conditions in which there is destruction of muscle and/or blood, shock, and dehydration. The necrosis of the tubules is completely reversible if the patient can be given successful supportive treatment for one to three weeks. Autopsy material indicates that death is usually due to pulmonary and/or cerebral edema rather than uremia.

Biochemical studies suggest that the low levels of serum chloride and carbon-dioxide combining power have no relation to the ultimate outcome, being merely indications of a compensatory mechanism and as such requiring no treatment.

The disadvantages of peritoneal irrigation, artificial kidneys and lavage of the gastrointestinal tract are so great that the three phase medical management is preferable. If the phase of injury cannot be prevented, it is treated vigorously with sufficient blood, plasma and electrolyte solution to correct anemia, shock, dehydration, acidosis or alkalosis. During the phase of anuria or oliguria fluid is restricted to 1,000 cc. of 15 per cent dextrose in distilled water plus a volume of physiologic saline solution equal to the loss in urine, vomitus and diarrhea fluid. During the phase of salt-losing diuresis the fluid and electrolytes are replaced on an eight hour schedule.

A review of the 46 reported cases treated with various modifications of this method showed that there were 7 deaths, 6 in patients with irreversible extrarenal disease. There was, therefore, a corrected mortality of 1 death in 40 cases or 2.5 per cent.

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*The necessary apparatus and solutions for the bedside urine chloride concentration determination of Fantus consist of a test tube, medicine dropper, 20 per cent potassium chromate, 2.9 per cent silver nitrate and distilled water for rinsing the dropper. To 10 drops of urine in a test tube, add 1 drop of potassium chromate solution and then silver nitrate solution, a drop at a time with shaking until the contents of the test tube suddenly change from yellow to brick red. The same dropper must be used throughout and rinsed between solutions. The number of silver nitrate drops required to produce the color change equals the urine sodium chloride concentration in grams per liter. If this test is being run by unskilled personnel, it is wise frequently to run a control using the always available physiologic saline solution, 10 drops of which will require 8 to 9 drops of silver nitrate solution to produce the color change.

War Participation

Dr. Herbert E. White, president of the Association, appointed two committees on a state level early in August. They are to be known as Procurement and Assignment and Emergency Medical Service. A chairman was appointed for each committee and one member for each of the four medical districts of the state.

The A.M.A. Council on National Emergency Medical Service advised that it may be necessary to re-establish an agency similar to the Procurement and Assignment Service of World War II. On the national level, therefore, pertinent information will be disseminated with the committees on a state level, which explains the necessity for the appointment of the two committees named.

Dr. Robert B. McIver, the Association's secretary-treasurer, has directed a communication to the president of each county medical society in Florida requesting the appointment of a Procurement and Assignment committee and also a committee on Emergency Medical Service. As this Journal goes to press, quite a number of presidents have already appointed their committees and sent in the names of the doctors who are to serve.

The emergency in Korea has necessitated prompt action. There has been considerable anxiety on the part of the medical profession as to what steps will be taken and who will be personally involved as medical officers. Information as to details has been rather meager awaiting definite plans of procedure from the top level. As plans develop, the Florida physicians will receive prompt information through the various channels.

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From Our President

HATS OFF TO THE LADIES!

The officers and members of the Woman's Auxiliary to the Florida Medical Association are to be highly commended for their fine accomplishments during the past year, with special reference to their part in the fight against socialized medicine.

A total of 134 resolutions were obtained, of which 65 were from women's organizations; among the first and strongest of the latter was one obtained from the American Federation of Women's Clubs at their 1949 meeting in Hollywood.

The activities of our Woman's Auxiliary members against socialized medicine, through their speakers' bureaus, distribution of literature, noteworthy newspaper publicity furnished to women's page editors, and the wonderful job they accomplished in the recent Senatorial race in their "Get-out-the-vote" campaign, are all deserving of highest praise. Their work has gained recognition beyond the confines of our own state, as manifested in the fact that the presidents of the Woman's Auxiliary to the American Medical Association, and to the Southern Medical Association, were guest speakers in the meeting in Hollywood of our Woman's Auxiliary.

We express the hope that all County Medical Societies will work in close cooperation with the Auxiliary members in their continued fight against state medicine.

Herbert E. White.

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Writers of Medical News Urged To Be Cautious

Dr. Russell S. Boles of the University of Pennsylvania, in an unusual address before the recent meeting of the American Medical Association in San Francisco, criticized irresponsible physicians and writers for failing to judge carefully the source and content of medical news. In his chairman's address before the Section on Gastro-Enterology and Proctology, Dr. Boles said that "the reporting of medical news, in general, is of high order." He went on to say, however, that free lance writers and physicians who give out premature press releases on research that has not been substantiated were responsible for misunderstandings and confusion and that they unwittingly served as agents for poor public relations.

Dr. Boles decried premature reporting of investigations with the use of such phrases as "holds promise," "looks promising," or is entitled to "further investigation." He pointed out that scientists and ethical science writers have no desire to present medical news that may later prove to be erroneous and he stated that such items may legitimately appear in professional journals, but not in the public press, for to people in general such phrases may well imply that a cure is on the way. He emphasized the need for physicians and medical institutions to cooperate with medical writers whose experience and background permit them to evaluate new developments.

Citing the phenomenal increase in the use of penicillin and streptomycin, Dr. Boles said that extravagant and indiscriminate publicity of even proved valuable remedies is sometimes unwise. The domestic production of penicillin increased from 21,000,000,000 units in 1943 to 133,229,000,000 units in 1949; production of streptomycin increased from less than 2,000,000 grams in 1946 to 83,000,000 grams in 1949. Dr. Boles stated that this increase was out of all proportion to the known indications for the use of these two drugs and that this tremendous output resulted from arousing curiosity to the point where the public demanded these drugs in conditions for which there was no proved specific indication.

At about the same time Dr. Boles was speaking, Dr. Arthur L. Bloomfield of Stanford University Medical School, in his chairman's address before the Section on Internal Medicine, challenged one of the most publicized medical developments of recent times—the use of antihistaminics in the common cold. "There is no solid evidence," says Dr. Bloomfield, "that the true cold is influenced by antihistaminics or antibiotics, nor is there any reliable method of prevention." Various forms of traumatic rhinitis, he said, which may be amenable to antihistaminics and antibiotics are not the common cold at all.

Warnings from these two authorities are timely and should be heeded by one and all. Pseudo cures, reports of limited numbers of cases and overenthusiastic claims, when made public, endanger not only the bodies and pocketbooks of our patients but also give false hopes which end in bitter disappointment when there is no benefit. If we are to maintain relations with the public on a satisfactory level, it will be necessary for us to make sure that medical news emanates from reliable sources, that it is evaluated critically and that it is presented clearly and accurately.

World Medical Association Meeting New York, October 16-20

When the World Medical Association convenes in New York City on October 16 for its fourth general assembly, it will have an imposing list of accomplishments to its credit although it has been organized barely three years. Its membership includes the national medical associations of 40 countries. It has adopted an International Code of Ethics and also a modified Hippocratic Oath already approved by several organizations. During its brief existence it has investigated medical education in 26 countries, social security as it affects medical practice in 24 countries, cult practice in 24 countries, medical advertising in 23 countries, postgraduate medical education in 32 countries, and the status of the medical profession and medical man power in 23 countries. These studies will be kept up to date and will be extended to cover countries not already included. Investigations of hospital facilities and of certain pharmaceutical problems in the various countries are now in progress.

The Bulletin of the World Medical Association, published quarterly, is the official organ. All publications are printed in three languages, English, French and Spanish.

Arrangements for medical contacts by physicians traveling in foreign countries is another service rendered by this worldwide organization. It also arranges lectures by physicians traveling in foreign countries.

Acting through its component national medical bodies, the World Medical Association endeavors to "enlist each of the approximately 500,000 physicians represented by them to promote, conscientiously and with unflagging zeal, all those principles that contribute to the free pursuit of scientific truth and the free exercise of their professional skill."

Certainly committed to this objective is Dr. Elmer L. Henderson, currently president of the American Medical Association, who accedes to the presidency of this world organization at the forthcoming New York meeting. As this Louisville surgeon sits at his handsome, old-fashioned, walnut, roll-top desk with the great men of medicine past and present looking down upon him from the walls above it, he will find in the ensuing months that the eyes of his medical colleagues throughout the world are focused upon him. World medicine looks confidently to him, as does American medicine, for the brilliant leadership he is capable of giving and will give unstintingly in its behalf during the crucial period immediately ahead.

Communism — Socialism's Tool

It has become more and more evident to the laity and the profession alike that the problem of combatting nationalized medicine is but one facet of the much greater problem of opposing the conversion of this country into a socialist state. The destructive pathway along which the nationalizers of medicine — and eventually the other professions, business and industry — would lead us has many diverting byways that tend to distract attention purposely from the main issue of socialization of the country. A major bypath that lately has assumed the proportions of a superhighway in the public eye is communism.

The threat of communism is indeed real and should be thoroughly aired and completely thwarted. But it should not be overlooked that the hue and cry over the inroads of communism in our midst serve conveniently to cloak the more insidious threat of socialism. Attacking communism proved a convenient expedient for the national socialists of Germany; attacking fascism likewise proved advantageous for the communists. Here in America Nazi agents cleverly inveighed against communists, and communists, in turn, condemned Nazism as a threat to American government. Always the idea was to divert attention from their own programs.

As a people we may well take heed. While we remain aroused over the grave danger of communism to our freedom-loving manner of living, let us not permit the necessity for opposition to this repugnant foreign ideology to divert our efforts from opposition to the creeping socialism that is upon us. Its methods are much more insidious and difficult to oppose than are those of communism.

While at the present time communism is underground and boring from within, the socialistic program of establishing a planned economy in a country which has always boasted of freedom of opportunity goes on apace and openly. Its designing promoters grow bolder in revealing their nefarious schemes. The growth of bureaucracies in Washington in recent years is nothing short of a national scandal; some have indeed become unmanageable, even by the Congress. Under pretense of preventing monopolies, such as those of business or utilities, there has been created a great monopoly of government.

The true American patriot wants nothing that even savors of communism. Nor does he desire to

become the victim of an old political trick — the strategy which utilizes the dislike of communism to camouflage the inroads of socialism, its precursor on our government.

We Are Opposed

Reticence with the press, traditionally characteristic of the medical profession, has boomeranged. It has unwittingly afforded socialist schemers the opportunity of creating a widespread opinion that physicians are opposed, for selfish reasons, to the improvement of medical care of the people. The absurdity of such propaganda is well known to its political proponents, but the people, the innocent and intended victims, must be fully apprised of the untruthfulness of the charges. They must be made to realize that it was refusal of the physicians of this country to bow down to the demands of the advocates of a politically inspired program of nationalized medicine as a step in the transformation of the government into a socialist welfare state which brought charges of opposition to progress and to the best interests of the health of the nation's citizens.

In view of these false accusations, it seems timely to review those things to which we as physicians actually are opposed. Dr. Ernest E. Irons, immediate past president of the American Medical Association, recently summarized well the salient points of opposition. We are, said he,

Opposed to quackery, political as well as medical.

Opposed to trifling with human life by the use of dangerous quack remedies and to deceptive proposals of medical charlatans.

Opposed to trifling with human welfare by the promulgation of any so-called welfare measure which saps the vitality and incentive of citizens and ultimately leaves them enmeshed in the toils of socialism.

Opposed, both as physicians and citizens, to the imposition on the American people of a system of compulsory taxation to pay for a medical program which will destroy the quality of present medical care, and make impossible the remedying of recognized faults in our present system.

Opposed, in the same dual capacity, to the saddling on our national budget of an additional burden which will add to the present waste of our national financial resources, increase our taxes, and accelerate the progress of inflation.

Opposed, finally and most important of all, to the undermining of our American democracy by the insidious propaganda of false security of the socialist welfare state.

With Dr. Irons, we are in accord with the statement of Benjamin Franklin: "Those who would give up essential liberty to purchase a little temporary safety, deserve neither liberty nor safety." The forthcoming advertising campaign in behalf of American medicine, although a radical departure from former policy, should go a long way toward revealing to the laity the true stand of the medical profession, dedicated unequivocally as it is to improvement of medical care for all the people.

Sanford B. Manks and the Germ Theory

Sanford B. Manks of DeLand, Florida sounds forth in the Herald of Health and Naturopath Magazine for July 1950 in an article called "Naturopathy Is the True Healing Method." Among the profound observations of this would-be oracle and healer was the statement that germs are secondary, that they are not the cause of disease but the result of it. The following paragraph preceded the article:

> "As explained many times before, this author—although a Naturopath of country-wide standing—cannot receive mail at his home under his professional title. When letters do arrive in DeLand, Florida, addressed to Dr. Manks, they are returned by the post office to the sender. Our author is 'officially dead' because he dared defy medical might. But he's not discomfited as each and every day he is joined in this unique gehenna by other practitioners who have 'overstepped' the lines laid down by big hearted medical science."

Articles of Medical Interest in Lay Publications

It is gratifying to note the ever increasing number of well written articles of medical interest in outstanding lay publications throughout the nation. We have two in particular in mind at the present time: one in the July issue of Red Book, page 26, entitled "Is Your Doctor a Quack?" and the other in the July 8 issue of The Saturday Evening Post, page 30, entitled "The Man the Doctors Hate" (Oscar Ewing).

The Journal is devising a plan whereby every article of this type will be noted when it appears and a record made of it for future reference.

Hearings

Presidential Reorganization Plan No. 27—To create a Department of Health, Education and Security. Public hearings were held on July 6 and 7 by the Senate Committee on Expenditures in the Executive Departments. Dr. Louis H. Bauer, Chairman of the Board of Trustees, represented the American Medical Association. His testimony contained many of the same basic arguments used by him in testifying against the plan at the House of Representatives hearings in June. In addition, he was able to include the recent House of Delegates resolution "expressing its firm conviction that Reorganization Plan No. 27 will not promote the health of the people and will not effectuate the recommendations of American medicine toward that end." He further stated that this "plan does not reorganize anything. It merely elevates to an Executive Department status an existing agency of the Federal Government, with all of its inadequacies."

Other witnesses who testified against the Plan were Senators Taft, Hendrickson, Knowland, Butler, and Smith (N. J.); Marjorie Temple, American Association of University Women; Miles Kennedy, American Legion; and Edgar Fuller, American Association. Testifying for the Plan were Oscar Ewing and others.

The overwhelming defeat of the bill in the House on July 10 by a vote of 249 to 71, or 31 votes more than the majority of 218 necessary to defeat the Plan, appears to show that our legislators by and large agree with the philosophy of our medical leaders. Said Representative Arends (Ill.), Republican whip, aptly enough: "This is not even a reorganization plan. It reorganizes nothing. It would be much more accurate to call it a political promotion plan for the advancement of socialized medicine." All six of Florida's Congressmen were present and voted against the Plan. The profession would do well to commend them personally for their confidence in the free practice of American medicine.

1950 A.M.A. Convention

Evidence of the high interest the medical profession maintains in its professional organizations is manifest in the record breaking attendance at the recent 1950 A.M.A. convention in San Francisco. Although final tabulations are unavailable at this writing the preliminary estimates on registration indicate all old records have been exceeded by a large margin. The largest previous registration of physicians was 15,667 at Atlantic City for the Centennial meeting in 1947.

Public interest in the activities of their doctors was equally keen as signified by unprecedented press coverage, local and network radio transmissions and telecasts. For the first time in history the address of the incoming president was broadcast over a nationwide network.

The scientific meetings contained papers of national and international significance. More than 300 papers were presented. In addition over 150 scientific and 300 techical exhibits provided valuable information to various phases of medical practice.

Dr. Elmer L. Henderson of Louisville, Kentucky, long associated with A.M.A. activities and chairman of its Board of Trustees at the time he became president-elect in 1949, succeeded Dr. Ernest E. Irons of Chicago as president. Dr. John W. Cline of San Francisco is the new president-elect. Dr. R. B. Robins of Camden, Arkansas, Democratic National Committeeman from his state, is the vice president. Among ranking officials re-elected to their respective positions were Dr. George F. Lull of Chicago, secretary and general manager, and Dr. F. F. Borzell of Philadelphia, Speaker of the House of Delegates.

Atlantic City was selected as the convention city for 1951. The Clinical Session, originally scheduled for Denver, Colorado, has been changed to Cleveland, Ohio, December 5-8.

Representing the Florida Medical Association at the San Francisco meeting were its two delegates, Dr. Homer L. Pearson, Jr., of Miami and Dr. Louis M. Orr, II, of Orlando. Dr. Pearson is a member of the Judicial Council. Dr. Orr served as a member of the House of Delegates Reference Committee on Hygiene and Public Health.

In spite of the great distance separating Florida from California 44 members of the Association are included on the official roster. They are:

BRADENTON: John F. Mason, William D. Sugg. COCOA: Thomas C. Kenaston. CORAL GABLES: William L. Wagener, Jr. DANIA: Fred E. Brammer. FT. LAUDERDALE: Alfred E. Cronkite, Garland M. Johnson, Richard A. Mills, Alva R. Taylor. JACKSONVILLE: William G. Harris, Gordon H. Ira, Wilson T. Sowder. LAKELAND: James R. Boulware, Jr. MIAMI: James L. Anderson, Edward F. Fox, Robert M. Harris, Erna K. Klass, John D. Milton, Homer L. Pearson, Jr., Harold Rand, Wiley M. Sams, Robert T. Spicer, Richard F. Stover. MIAMI BEACH: Meyer J. Glick, Meyer B. Marks. MIAMI SPRINGS: Estella G. Norman. ORLANDO: Louis N. Christensen, Elwyn Evans, Edward T. Furey, Eugene L. Jewett, Louis M. Orr, II. ST. PETERSBURG: Dean W. Hart, Richard Reeser, Jr., Franklin W. Rousch, Jr. SARASOTA: J. Edward Harris,

Hugh G. Reaves, Karl R. Rolls. SEBRING: Leldon W. Martin.

TAMPA: Chadbourne A. Andrews, Julius C. Dickinson. WEWAHITCHKA: Donald H. Anderson. WINTER HAVEN: Ivan W. Gessler. WINTER PARK: Ruth S. Jewett. STOCKTON, CALIFORNIA: John M. Gorman.

YOUR BLUE SHIELD

Blue Shield Reminders

Certain types of surgery require that individual consideration be given the claim for benefits before Blue Shield payment can be made. As cases of this nature are reviewed by the Blue Shield Claims Committee, it is necessary that certain medical information be submitted for a fair disposition of the claim. Some of the more frequent procedures requiring such information are listed below with reference to the additional information needed.

Hysterectomy

For surgery of the uterus, it is important to state whether a part or the entire uterus was removed. Florida Blue Shield's liability for a sub-total hysterectomy is $100.00, whereas up to $125.00 is allowed for total hysterectomy. When a sub-total is done in connection with gynecologic repair work, Blue Shield liability is $135.00, and when the uterus is removed radically in connection with a cancerous condition the liability is $150.00.

Appendix

When pathology of the appendix is the prime necessity for the operation, the fee allowed is $100.00. When the removal of the appendix is incidental to other necessary surgery, no added liability may be accepted.

Burns, Lacerations and Plastic Surgery

In care of this nature, it is important that the area of the surface treated, length and depth of the wound, number of sutures required for closure, type of closure, area of skin grafted, etc. be indicated at the time the report is first submitted.

Reduction of Fractures or Dislocations

The Doctor's Service Report should indicate whether a closed or open reduction was performed and whether or not pins, plates, etc. were inserted.

Dermatology

The number, nature and location of all growths removed should be indicated on the claim report, as well as the type of closure, the approximate size of the growths removed and the number of sutures required for closure.

STATE BOARD OF HEALTH

Health Films Available to Physicians

Audio-visual aids are gaining rapidly in favor. One of the most popular is movies. Many schools and organizations now own film projectors. Professional societies clamor for technical films as an adjunct to regular programs. Such films frequently serve to stimulate better attendance. But many physicians do not realize that there is in the Florida State Board of Health a film library containing over 200 titles. These films are available without charge to any physician who requests them.

In these days of emphasis on public relations, many a busy doctor could use a popular health film to assist him in putting across a health program to civic clubs, women's groups or youth organizations. The State Board of Health has noted the rising interest in this form of education and has endeavored to keep abreast of the times by purchasing some of the excellent new titles released each year. High quality movies are produced by various commercial companies who have placed their films on loan in the State Board of Health Film Library. The only films accepted are those that conform to all ethical standards, as well as being interesting. Various voluntary organizations throughout the state, such as the Florida Tuberculosis and Health Association, have also deposited their films with the State Board of Health.

During 1949 3,300 films were shipped to various localities in Florida where they were seen by 800,000 persons.

Examples of professional films that physicians frequently request are: "Diagnosis of Breast Cancer," "Artificial Pneumothorax," "Diagnosis and Treatment of Venereal Diseases," etc.

Examples of popular films that physicians frequently use to supplement their talks before lay groups are: "The Traitor Within" (cancer), "Story of Wendy Hill" (diabetes), "Your Eyes," "Your Ears," etc.

A copy of a catalog may be obtained by writing to The Film Library, Florida State Board of Health, Jacksonville 1, Florida.

NEW MEMBERS

The following doctors have joined the State Association through their respective county medical societies.

Armour, Thomas, Jr., Coral Gables

Buchanan, Arthur P., Leesburg

Crawford, Hugh, Daytona Beach

Haskell, Edward G., Jr., Branford

Moffett, James D., Jr., Daytona Beach

Nickel, Frank W., Winter Park

Smith, Clyde F. B., Miami Beach

Sorvas, George P., Hollywood

Starke, George H., (Col.) Sanford

Sullivan, Benjamin H., Jacksonville

Wickman, William, Miami

DEATHS

Deaths—Members

Alderson, Starling P., Miami ..... June 29, 1950
Russell, Ralph E., Ocala ..... July 16, 1950

Deaths—Other Doctors

Stocking, John T., Jr. (Col.), Daytona Beach ..... April 15, 1950
Ryan, Maxwell D., Lake Wales ..... June 11, 1950
Maxwell, Leslie H., Ft. Lauderdale ..... June 29, 1950
Paniello, Santiago, Tampa ..... July 5, 1950

NATIONAL EDUCATION CAMPAIGN

The interest of the individual members of the Florida Medical Association participating in the National Education Campaign, being waged by the American Medical Association, state medical association and county medical societies, is evidenced by numerous speaking engagements being accepted. The following listing of speaking engagements includes only those which have come to the attention of The Journal.

Edward R. Annis, Miami, Robert Richter Amvets Post

Jack O. W. Rash, Miami, Northeast Miami Junior Woman's Club

Raymond M. Price, Ft. Lauderdale, local Kiwanis Club

Edward R. Annis, Miami Acacia Club

Harold S. Knowles, Orlando, local Kiwanis Club

Kenneth Phillips, annual convention of Florida State Massage Association

STATE NEWS ITEMS

Dr. Walter C. Payne, Pensacola, immediate past president of the Association, has the distinction of being the first state medical association president to have his presidential address distributed throughout the country by the A.M.A. Public Relations Department.

Dr. Payne's address was sent as an enclosure with a recent issue of the A.M.A. "PR Doctor and Exchange." His address has brought several commendatory letters from throughout the country. Included among those sufficiently impressed to write to Dr. Payne are Mr. Lawrence W. Rember, assistant to the general manager of the A.M.A., who was present at the convention and heard Dr. Payne's address and Dr. E. O. Swartz, President-elect of the Ohio State Medical Association.

Drs. Jack Q. Cleveland of Coral Gables and Samuel W. Page, Jr., of Miami are attending a postgraduate program at Philadelphia sponsored by the American College of Physicians.

Dr. Robert T. Hyde, Jacksonville, was the guest speaker recently at a meeting of the local Kiwanis Club.

Dr. James R. Hanson has moved his offices from Wildwood to Tavares.

Dr. Walter W. Sackett, Jr., of Miami is in New York taking postgraduate work at Cornell University.

Drs. Albert V. Hardy, Phillip W. Horne, Floyd K. Hurt and Clarence M. Sharp of Jacksonville were members of the faculty of the Seminar on Tuberculosis which was held in Orlando recently.

Dr. Frederick H. Bowen of Jacksonville recently attended clinics and his class reunion at the University of Virginia Medical School.

WANTED—ASSISTANT TO GENERAL PRACTITIONER: Salary first year and percentage basis thereafter; Prefer a Gentile, Southerner, over thirty, and must have a Florida license; Write Nathaniel M. Weems, M.D., P. O. Box 578, Boynton Beach, Fla., giving full particulars.

Dr. Russell B. Carson has returned to his practice in Ft. Lauderdale following a trip to Puerto Rico. While in Puerto Rico, Dr. Carson attended the organizational meeting of the Puerto Rican Urological Society where he was invited to present a paper.

Dr. Edward G. Haskell, Jr., announces the opening of his offices in Branford.

Dr. Jack Galin of Jacksonville, after a lapse of five and one-half years in service and three years postgraduate residency training, has returned to his home in Jacksonville. Dr. Galin will limit his practice to urology.

Dr. Lloyd J. Netto of West Palm Beach was named physician for the Town of Palm Beach retirement fund system by the board of trustees at a recent meeting.

Dr. H. Milton Rogers of St. Petersburg recently addressed the medical staff of Bay Pines Hospital and members of the Hillsborough and Pinellas County Medical Societies on the subject of "Congenital Heart Disease."

Dr. Frederick K. Herpel, chairman of the Committee on Scientific Work, urges any member desiring a place on the scientific program at the annual meeting in Hollywood, April 23-25, to make application by November 1.

Applications, together with a brief synopsis of the paper, should be forwarded to Dr. Herpel at 223 Sunset Road, West Palm Beach.

Any specialty group having an outstanding essayist on its program preceding the Association's annual meeting is requested to make application for this essayist to read a paper of general interest before the scientific assembly.

Physicians who presented papers at the annual meeting in 1950 are not eligible for a place on the 1951 program.

Dr. Charles W. Boyd of Jacksonville recently lectured on internal and external diseases of the eye at Florida State University.

FOR SALE: Office space and equipment of a well established E.E.N.T. practice located in Ocala. Associated with five other doctors in modern office building. For details write: Mrs. Ralph E. Russell, 919 Lake Weir Avenue, Ocala, Florida.

Dr. John W. Hayes of Jacksonville addressed the Polio Workshop for nurses at Hope Haven Hospital in July on the subject of early diagnosis and treatment in acute anterior poliomyelitis. Dr. Frank L. Fort discussed orthopedic correction of deformities resulting from polio.

Drs. Arthur J. Butt, Jr., and Joseph Q. Perry of Pensacola were guest speakers at a recent monthly meeting of the Coffee, Geneva and Dale County Medical Societies in Geneva, Alabama, on the subject of "Urologic Problems in General Practice."

Dr. Henry C. Sweany of Chicago has been appointed chief medical director of all Florida State Tuberculosis Sanitoria.

Dr. C. L. Brumback, formerly of Oak Ridge, Tennessee, has been named the new county health director of Palm Beach County.

Dr. Russell L. Counts of Branford is serving a one year residency in the Erlanger Hospital in Chattanooga, Tennessee.

Dr. Cornelia M. Carithers of Jacksonville was guest speaker at a recent meeting of the Jacksonville Pilot Club.

Dr. Reidar Trygstad announces the opening of his offices in Naples.

Dr. Luther W. Holloway of Jacksonville was a faculty member for the Southern Pediatric Seminar which was held in Saluda, N. C., in July.

Plans are rapidly nearing completion for the annual medical district meetings which are scheduled for Oct. 30-Nov. 3. Northwest District A will meet in Marianna on Monday, October 30. Northeast District B will be held in Ocala Wednesday, November 1. Southwest District C is scheduled for Ft. Myers on Thursday, November 2. On Friday, November 3, Southeast District D will meet in West Palm Beach.

RADIOLOGIST SEEKS ASSOCIATION: With Hospital, Group, or other Radiologist. Board Diplomate, Diagnosis and Therapy. Age 35. American, Cornell Graduate, healthy, hard worker. Florida license. Write 69-33, P. O. Box 1018, Jacksonville, Fla.

COMPONENT SOCIETY NOTES

Bay

At the recent meeting of the Bay County Medical Society, Dr. Arthur J. Butt, Jr., of Pensacola presented a paper on "The Clinical Significance of Hematuria."

Broward

State dues for 1950 have been paid by all members of the Broward County Medical Society.

Dade

The regular monthly meeting of the Dade County Medical Association was held at the Miami Woman's Club. Dr. Herman H. Gray presented a paper on "Diagnosis and Treatment of Leprosy," with kodachrome illustrations.

Leon-Gadsden-Liberty-Wakulla-Jefferson

The Leon-Gadsden-Liberty-Wakulla-Jefferson County Medical Society held its quarterly meeting at the Florida State Hospital. Papers on medical subjects were presented by Dr. Rudolph Bell of Thomasville, Ga., and Drs. Harold H. Ring and Oswald A. Holzer, members of the Florida State Hospital staff.

Monroe

The Monroe County Medical Society recently held a combined clinical-pathological meeting at the Monroe County Hospital. Guests were Dr. Alfred E. Cronkite, Ft. Lauderdale, and members of the U. S. Navy Medical Corps from the local bases.

St. Johns

According to Dr. Joseph A. Shelley, secretary, the St. Johns County Medical Society has gone on record as endorsing the establishment of a health unit in that county, provided that before its establishment adequate funds be made available for the full cost of care of indigent patients including hospitalization when necessary.

OBITUARIES

Leland Francis Carlton

Dr. Leland F. Carlton of Tampa died on June 5, 1950 at the University Hospital in Chicago a few hours after he had undergone an operation. He was 62 years of age.

A Floridian, Dr. Carlton was born in Wauchula on Jan. 23, 1888. Upon graduation from the Wauchula High School, he attended Stetson University at DeLand for three years before entering the University of Chicago, from which he was graduated in 1909. He obtained his medical degree in 1914 from Rush Medical College in Chicago and then served an internship at the Washington Boulevard Hospital in that city.

Immediately thereafter, in 1915, Dr. Carlton entered the practice of medicine in Tampa. Although classified as a general surgeon, he specialized in orthopedic surgery. For thirty-five years he was active in civic and fraternal affairs of Tampa and Hillsborough County. He was a member of the Greater Tampa Chamber of Commerce, a past president of the Tampa Kiwanis Club and a past lieutenant governor of the fifth division of Kiwanis International. A thirty-second degree Mason and a Shriner, he was also a member of the Royal Order of Jesters, exclusive order of the Shrine. He was affiliated with the Knights of Pythias and held membership in the First Baptist Church of Tampa.

Throughout his career Dr. Carlton was prominently identified with numerous medical organizations. He was a member of the Hillsborough County Medical Society, of which he was a past president, the Florida Medical Association, the American Medical Association, the Southern Medical Association, the American College of Surgeons, the Southeastern Surgical Congress and the Founders' Group of the American Board of Surgery. In addition, he was a member and a past president of the Association of Seaboard Air Line Railway Surgeons, and of the Florida Railroad Surgeons Association. He was consulting surgeon to the Florida Workmen's Compensation Commission and surgeon of the Florida State Fair Association. For more than two decades Dr. Carlton served the Florida Medical Association as a member, and several times chairman, of important committees and in 1942 was Councilor for the Fifth District.

Continued on Page 169

In 1921, Dr. Carlton married Miss Margaret Brown, daughter of former Mayor and Mrs. Charles H. Brown, of Tampa, who survives him. Also surviving are two daughters, Mrs. Herbert Kay of Wauchula and Mrs. Reid Gullatt of Cochran, Ga.; two granddaughters, Meg and Pamela Gullatt; two grandsons, Leland Carlton Kay and Stephen Kay; one sister, Mrs. Ella Southerland of Wauchula, and six brothers, former Governor Doyle E. Carlton of Tampa and Charles, C. J., Alton H., Gettis and Leffie M. Carlton all of Wauchula. His nephew, Dr. Leffie M. Carlton, Jr., of Tampa was associated with him in the practice of medicine.

George Walter Potter

Dr. G. Walter Potter of St. Augustine died on June 8, 1950 in a hospital in that city. He was 77 years of age.

A native of Pennsylvania, Dr. Potter was born in Bedford in 1873. He attended Franklin-Marshall Academy and Ohio Wesleyan University. In 1902, he received his medical degree from Jefferson Medical College of Philadelphia.

In 1908, he came to St. Augustine to reside and for thirty-seven years served on the medical staff of the Florida East Coast Hospital there, retiring in July of 1945. He was a past president and director of the St. Augustine Rotary Club, in which he was active for many years. He was a member of the Presbyterian Church in his home city and of the Masonic Lodge of Everett, Pa.

Dr. Potter was a member of the St. Johns County Medical Society, the Florida Medical Association and the American Medical Association.

Surviving are his widow, Mrs. Maude Potter; two daughters, Mrs. Edgar Austin and Mrs. Tim Merrill, both of Palatka; two sons, David W. Potter of Tallahassee and Samuel S. Potter of St. Augustine. Also surviving are a niece, Mrs. Carl Schuman of Osterburg, Pa., and four grandchildren.

Ambulance Service

FERGUSON FUNERAL HOME

1201 South Olive
WEST PALM BEACH, FLA.

Advertisement

From where I sit
by Joe Marsh

Mud Lake Gets "Cleared Up"

County officers got a notice from the government not long ago, asking them to change the name of Mud Lake. Seems it's a pond, not a lake, by government standards.

Because it lies inside our town limits, we asked to do the name-changing ourselves. Figured we'd think up a new name. Mud Lake's really not very muddy—sort of pretty, in fact.

County people said go ahead, so we held a Meeting. Everyone suggested something. Windy Taylor thought "Taylor Pond" would be nice, because his place borders it—for about 30 feet! But we decided to call it "Turtle Pond" in honor of the real owners.

From where I sit, naming that pond wasn't the most important thing in the world—but the *way* we did it *was*. Everyone offered his opinion and then the majority vote decided it. That's the way it should be—whether it concerns naming a pond, or having the right to enjoy a friendly glass of beer or ale—if and when we choose.

Joe Marsh

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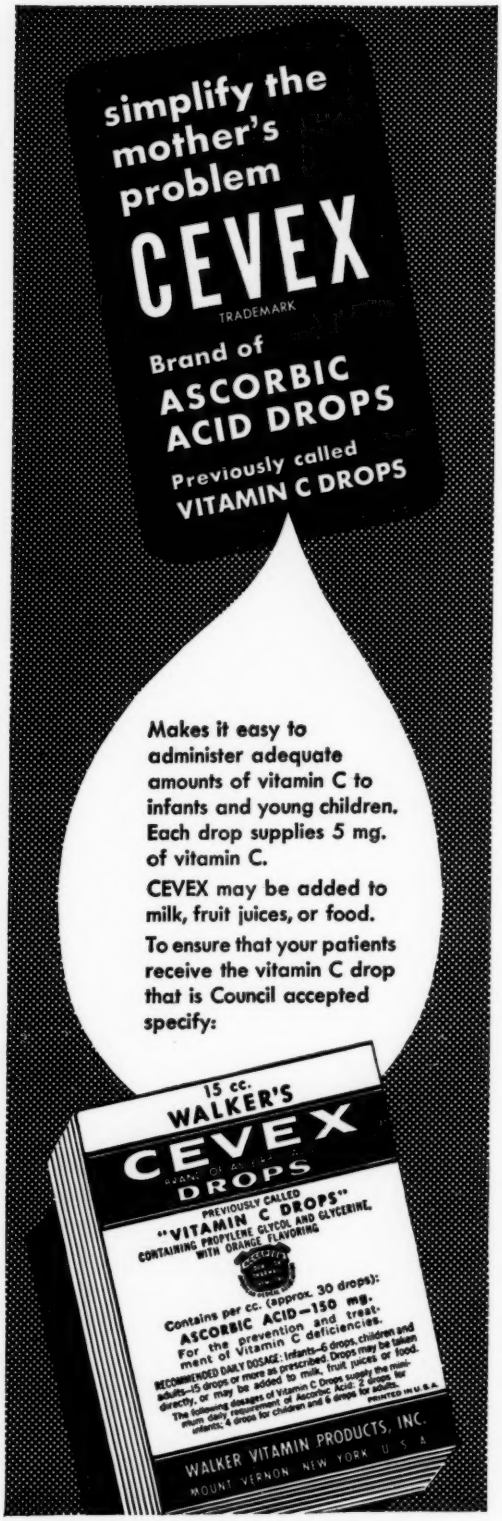
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What Every Doctor Should Know

One thousand, seven hundred and three doctors' wives registered at the 1950 convention in San Francisco this past June 25. These women did not attend the convention sessions because they enjoyed it more than anything else they could find to do in the city of San Francisco. They met together in order that they might be better fitted to carry on the work of the Auxiliary which is the number one ally to the American Medical Association. I only wish that a few of our Florida doctors could have "listened in" long enough to know exactly what the women are doing.

The national president, Mrs. David Allman, did not hold me to the usual two minute state reporting time since she wanted other states to hear something of what Florida had done in the Pepper-Smathers political campaign. I was delighted to have the extra time, so I "ad libbed" for six or seven minutes on what Florida Auxiliary members did as individual citizens in the recent political campaign. I suggested that they too should go home, take off their hats and gloves and get down to "grass root" politics and start clearing their termites out of Washington. I pointed out that women had a greater job to do than the men since most voters are women. The idea seemed to "take" for every delegate from Florida spent the remainder of her time in discussing ways and means citizens have to elect a candidate. Dr. Anderson and I spent two days in Salt Lake City on our way home, meeting with both doctors and Auxiliary members as well as candidates with the idea of giv-

ing them any advice we could on how they as citizens can help to defeat Senator Thomas of Utah.

Two very significant resolutions were passed in San Francisco: (1) that the Advisory Council of the AMA be petitioned to request that state auxiliaries stress within their respective communities the inclusion of the study of American History from the first grade through college, and (2) that the Auxiliary to the AMA implement the American Medical Association's twelve point program for the advancement of medicine and public health.

Florida now has sixteen organized county auxiliaries. We should have thirty-six in order to be 100 per cent organized. We need that organized force now more than ever before. Won't you give us a hand, boys? Please make it your personal responsibility to see that you have an auxiliary in your county, and that your wife is an active member. With our combined efforts this medical team will carry the ball which has been thrown to us for an American touchdown and victory.

Mrs. James L. Anderson
President

BOOKS RECEIVED

SEX WITHOUT FEAR. By S. A. Lewin, M.D., and John Gilmore, Ph.D. Price, $3.00. Pp. 121. New York, Lear Publishers, 1950.

Made increasingly aware of the anxiety on the part of most young couples to build their married life on a firm foundation, the authors, after a careful survey of the available literature, prepared this little volume, couched in layman's terms, fully illustrated with simple but medically correct illustrations, with a comprehensive glossary and at a modest price, yet covering every necessary aspect of sex and sex relationships.

The book is addressed primarily to the young couple just starting married life. Its simplicity and clarity make it especially valuable, for it sets forth in simple, everyday language without technical or obscure phraseology, medically, psychologically and ethically correct information. Highlighting the text throughout are illustrations, both unique and vital, by Dr. Gilmore, well known medical artist.

The publisher points out that the book is being distributed ethically within the medical profession and its allied branches, and is available to the public on physician's prescription. It is intended as an aid in practice, covering every aspect of sex and sex relationships from genital anatomy to methods of contraception, and may be obtained by physicians at discount up to 50 per cent to enable them to keep sufficient books on hand to meet the immediate needs of their practice.

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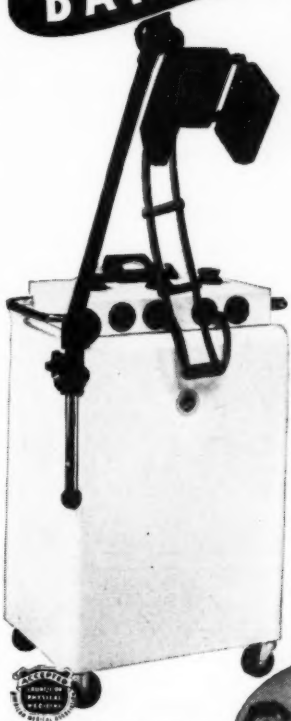

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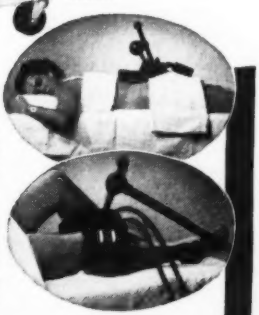

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